[0014]
[Preferred Embodiments] Embodiments of the present invention will now be described with reference to the drawings. FIG. 1 is a principle diagram of a network system according to the present invention.

[0015] A network system 1 is configured to a processing server 10 which provides various network services, a terminal 20 which is connected to a network by an ordinary user, a peripheral equipment 29 which is connected to the terminal 20, a maker ID management server 30 which manages a maker ID and an address of an attribute management server, an attribute management server 40 which manages the association between an apparatus ID and the attribute of its terminal, a network 50 which transmits information as an IP packet (Packet: The aggregation of packet data for when transmitting information in the network). Here, the maker ID management server 30 has a database 31 for searching the attribute management server that corresponds to the apparatus ID. The attribute management server 40 has a attribute database 41 which manages the association between the apparatus ID and the attribute of its terminal.

[0016] The processing server 10 receives the IP packet which is a information request from the terminal 20, and extracts an apparatus ID from the network address section in the IP packet. Based on a maker ID in the extracted apparatus ID, the processing server 10 instructs the maker ID management server 30 to search the attribute management server 40 that corresponds to maker ID. Moreover, based on the information of the attribute management server 40 transmitted by the maker ID management server 30 subsequent to the search, the processing server 10 instructs the searched attribute management server 40 to search the attribute that corresponds to apparatus ID. Furthermore, based on the attribute that corresponds to the apparatus ID transmitted from the attribute management server 40 subsequent to the search, the processing server 10 provides to the attribute to the terminal 20 of the information request destination the various network services that correspond to the attribute.

[0017] The terminal 20 is connected to the network by an ordinary user, and performs an information request, etc.. When performing an information request, the terminal 20 sets an apparatus ID within the network address of the IP packet, and transmits the IP packet via the network 50.

[0018] The peripheral equipment 29 is connected to the terminal 20 in a local network by LAN (Local Area Network). Also, the peripheral equipment 29 provides the service of various kinds of input and output in response to a demand from the terminal 20.

[0019] The maker ID management server 30 searches the corresponding attribute management server 40 based on the maker ID and by means of the database 31 in response to a demand from the processing server. After the search, the maker ID management server 30 transmits an address of the attribute management server 40 that corresponds to the maker ID to the processing server 10. Here, the maker ID management server 30 is installed such that several servers that attempt to acquire attribution information do not have to retain a similar overlapping database. When the attribute management server 40 is globally determined to be only one and not for each production maker of the electronic equipment, the maker ID management server 30 does not need to be installed.

[0020] The attribute management server 40 searches the corresponding attribution information from the attribute database 41 based on the apparatus ID in response to a demand from the processing server 10. After the search, the attribute management server 40 transmits the attribution information that corresponds to the apparatus ID to the processing server 10. Here, the attribute management server 40 is managed by the maker that manufactured and sold the electronic equipment, and is published on the Internet by launching a server for managing the attribute. However, it may be managed by a small number of attribute management servers 40 by globally determining the attribute management server 40 to be only one or by independently setting a management system and having the attribute database 41 of several makers.

[0021] The network 50 transmits information based on a predetermined protocol within the network in which communication paths are widely spread. The protocol may be IPv6, HTTP (Hypertext Transfer Protocol), or FTP (File Transfer Protocol).

The network 50 is, for example, the Internet of IPv6 or the Internet 2 (hereafter, either of those is referred to as the IPv6 network).

[0022] According to such a network system, the processing server 10 receives the information request packet transmitted from the terminal 20. Then, based on the maker ID and apparatus ID in the information request packet, the attribution information optimal for the terminal 20 can be inquired and confirmed to the attribute management server for each maker.

[0023] Accordingly, the attribution information related to a user use electronic equipment can be acquired from the attribute database provided by a maker, instead of acquiring it from a user use terminal. As a result, the user can automate and simplify various procedures.

[0024] The embodiments of the present invention will now be described in detail. In the embodiments of the present invention, the processing server 10, the terminal 20, the maker ID management server 30, and the attribute management server 40 are connected via the network 50 in a system as shown in FIG. 1. Among those connections, data transmissions are performed between the processing server 10 and the terminal 20, between the processing server 10 and the attribute management server 40, and between the processing server 10 and the maker ID management server 30, respectively. Here, the functions of each device in the embodiments of the present invention are described in detail in the below, with referring to the cases in which data is transmitted to the opposite device (hereafter, this definition is used to refer to a server and a terminal) or data is received from the opposite device.

[0025] FIG. 2 is a functional block diagram showing the processing function of the processing server according to the present invention. The processing server 10 is configured to the processing unit 11 which performs function management of the whole device, the volatile memory 12 which temporarily stores a program or data, the external storage device 13 which stores data, the communication processing unit 14 which controls the communication with the other terminals, and a communication I/F 15 which makes connection with a communication medium. Here, the processing server 10 is opposed to the terminal 20, the maker ID management server 30, and the attribute management server 40, respectively, via

the network 50.

[0026] The processing unit 11 controls the volatile memory 12, the external storage device 13, and the communication processing unit 14, and performs the function management of the whole device. The processing unit 11 is, for example, a CPU (Central Processing Unit). This implements the functions according to the present invention by executing the various programs stored in the volatile memory 12. Here, the functions of the processing unit 11 is broadly divided into a data transmission and reception section 11a, a received data storage section 11b, and a various request processing section 11c.

[0027] The data transmission and reception section 11a passes the information request packet received at the communication processing unit 14 from the terminal 20 to the received data storage section 11b. On the other hand, the data transmission and reception section 11a outputs various information packet towards the terminal 20 to the communication processing unit 14. Moreover, the data transmission and reception section 11a outputs the various information search request packet towards the maker ID management server 30 and the attribute management server 40 to the communication processing unit 14.

[0028] The received data storage section 11b divides the information request packet into a network address section and an user data. Further, the received data storage section 11b extracts a maker ID section and a solid identification section from the network address section, and stores it in the volatile memory 12.

[0029] The various request processing section 11c provides various services in response to a information request from the terminal 20. Here, the various request processing section 11c requests the maker ID management server 30 to search an address for the attribute management server 40, based on maker ID, in order to investigate the attribute corresponding to the terminal 20. Moreover, the various request processing section 11c requests the attribute management server 40 to search attribution information for the terminal 20, based on the address received from the maker ID management server 30 and apparatus ID after searching the address. Furthermore, the various request processing section 11c provides various services corresponding to the terminal 20 based on the attribution information

received from the attribute management server 40 after searching the attribution information.

[0030] The volatile memory 12 stores the received data from the received data storage section 11b. Moreover, the volatile memory 12 temporarily stores a program which implements the functions of the present invention. The volatile memory 12 is a writable and volatile storage medium, and is, for example, a RAM (Random Access Memory).

[0031] The external storage device 13 stores data in order to compensate the capacity shortage of the volatile memory 12. The external storage device 13 is used also for storing the received data on a long-term basis. The external storage device 13 is, for example, a hard disk drive (Hard Disk).

[0032] The communication processing unit 14 transmits the various information packet or the various information search request packet received from the data transmission and reception section 11a to each of the opposed devices via the communication I/F 15 and the network 50. On the other hand, after receiving the information request packet or information search completion packet from each of the opposed devices, the communication processing unit 14 outputs it to the data transmission and reception section 11a.

[0033] The communication I/F 15 makes a connection between the processing server 10 and a communication medium in accordance with a predetermined data transfer rate, timing, and a protocol. Moreover, communication I/F 15 performs data transmission among the terminal 20, the maker ID management server 30, and the attribute management server 40, via the network 50. The communication medium is, for example, a metal cable, an optical fiber, and a wireless network.